



Preparatory Program – AMTI - NMTC Final

Primary Level (Std V-VI)

Year 2011 Test Paper

EXCLUSIVE ★

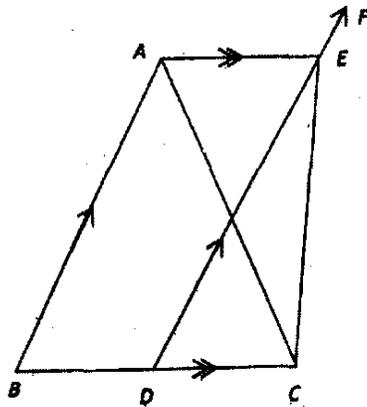
Success begins with you ...-

Note -

Elegant and novel solution will get extra Credits
Diagrams and explanation should be given wherever necessary.
Rough work should be shown in the answer copy itself.

1. Nivisha of standard six bought a book. On the first day she read one fifth of the number of pages of the book plus 12 pages. On the second day she read one fourth of the remaining pages plus 15 pages and on the third day she read one third of the remaining pages plus 20 pages. The fourth day which is the final day she read the remaining 60 pages of the book and completed reading. Find the total number of pages in the book and the number of pages read on each day.

2. In the adjoining figure $\triangle ABC$ $\angle A$ is equal to an angle of an equilateral triangle.



DEF is parallel to AB and AE parallel to BC
 $\angle CEF = 170^\circ$ and $\angle ACE = \angle B + 10^\circ$. Find the angles of the triangle ABC and $\angle CAE$

3. $p = 1 + 2^1 + 2^2 + 2^3 + \dots + 2^n$ where p is a prime number and n is a natural number. Find all such prime numbers $p < 100$ and the corresponding natural number n . For each (p, n) find $N = p \times 2^n$ and find the sum of all divisors of N .

4. The sequence 8,24,48,80,120, ---- consists of positive multiples of 8, each of which is one less than a perfect square. Find the 2011th term. Divide it by 2012 and find the quotient.

5. Each letter of the following words is a positive integer. The letters have the same value wherever they occur. The numerical values given for each word is the product of the corresponding numbers of the letters appearing in the word.

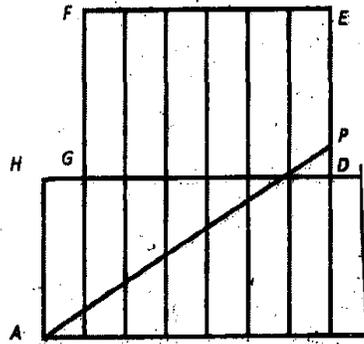
BILL =35, BLAB = 225, BLANK = 270, SLANG = 2574. Find the value of SINKING.

[Ex: If P=12, U=2, T==5 then PUT = 120].

6. (a) The length of the sides of a triangle are three consecutive odd numbers. The shortest side is 20% of the perimeter. What percentage of the perimeter is the largest side?

(b) The-sides of the triangle are three consecutive even numbers and the biggest side is $44\frac{4}{9}\%$ of the perimeter. What percentage of the perimeter is the shortest side?

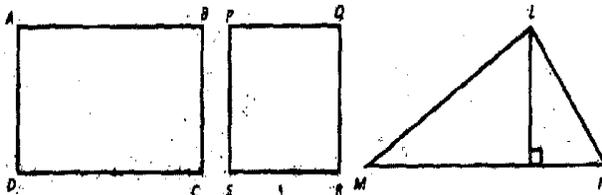
7. In the figure all the 14 rectangles are equal in size. The dimensions of each rectangle are 2 unit x 5 units. P is a point on ED .



AP divides the octagon $ABCDEFGH$ into two equal parts. Find the length of AP

(Hint: Area of a triangle = $\frac{1}{2}$ base x height).

8.

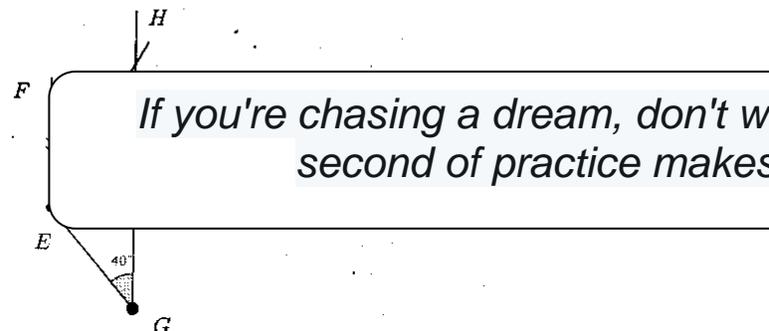
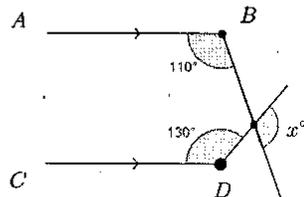


In rectangle $ABCD$, the length is twice the breadth. In the square each side is equal to one unit more than the breadth of the rectangle. In the triangle LMN , the altitude is one unit less than the breadth of the rectangle. Area of the rectangle is 18 square units. The sum of the areas of the rectangle and the square is equal to the area of the triangle. What is the base of the triangle and the areas of the square and the triangle.

Four things
for success:
Work, pray,
think and
believe.

The only place
where success
comes before
work is in the
dictionary.

11. Consider the sequence $\frac{3}{5}, \frac{6}{7}, 1, 1\frac{1}{11}, \dots$. The 2016th term of this sequence is $\frac{p}{q}$ where p and q are integers having no common factors. The value of $p + q$ is _____.
13. Mahadevan conducted a problem solving session for a group of 18 primary class students. Seeing the graded performance, he distributed packets of biscuits to all the students. The first student got 1 packet plus $\frac{9}{19}$ of 1 packet. The second student got 2 packets plus $\frac{9}{19}$ of 2 packets. The third student got 3 packets plus $\frac{9}{19}$ of 3 packets and so on. The total number of packets of biscuits distributed by Mahadevan is _____.
14. Using the digits of the number 2016, two digit numbers of different digits are formed. The sum of all these numbers is _____.
15. The least multiple of 7, that leaves a remainder 4 when divided by 6, 9, 15 and 18 is _____.
16. The number of revolutions that a wheel of diameter $\frac{7}{11}$ meter will make in going 8 kilometers on a level road is _____.
17. The radius of a circle is increased so that its circumference increases by 5%. The area of the circle will increase (in %) by _____.
18. The sum of seven numbers is 235. The average of the first three is 23 and that of the last three is 42. The fourth number is _____.
19. The number of $\frac{1}{6}$ that are in $116\frac{2}{3}$ is _____.
20. In the figure below, AB is parallel to CD and EF is parallel to GH . The value of $x^\circ - y^\circ$ is _____.



*If you're chasing a dream, don't wait
the second of practice makes*